

## STORMS AND WEATHER WARNINGS

## WASHINGTON FORECAST DISTRICT

No severe storms crossed the Washington Forecast District during the month, and storm warnings were required on only three occasions. Small-craft warnings were displayed on six days and they were mostly for the coast from Cape Hatteras northward. None were displayed along the east Gulf coast.

The first storm warnings displayed were from Delaware Breakwater to Eastport, Me., in connection with a disturbance of considerable intensity that was central over northern Indiana on the morning of the 19th. This disturbance was moving eastward underneath a very slowly moving high-pressure area that was over Ontario and Quebec at that time. The highest wind velocity reported was 60 miles an hour from the northeast at Nantucket, Mass.

On the morning of the 28th a disturbance of moderate intensity was central over eastern Tennessee, while an area of high pressure of considerable strength was over the Lake region and Ontario, and both were moving slowly eastward. Northeast storm warnings were ordered displayed from Cape Hatteras to Boston at 9.30 a. m. The highest velocity reported was 48 miles an hour from the northeast at Cape Henry, Va.

The last storm warnings of the month were displayed from Block Island, R. I., to Eastport, Me., at 9 a. m. of the 30th, in connection with a widespread disturbance over the eastern half of the United States and a strong high-pressure area over the Canadian Maritime Provinces. Block Island, Nantucket, and Eastport reported velocities in excess of 40 miles an hour, the highest being 48 miles from the northeast.

On account of the rather warm weather during much of April, fewer frost warnings than usual were required. Frost was reported from quite limited areas, mostly in the Ohio Valley, the middle Atlantic States, or the Appalachian region, on the 2d, 4th, 7th, 8th, 16th, 17th, 21st, and 29th. Frost warnings were not required at the end of the month for the greater part of New England and New York.—*C. L. Mitchell.*

## CHICAGO FORECAST DISTRICT

*Storm warnings.*—The storm-warning season on the Great Lakes opened on the 16th, but prior thereto one advisory warning for the benefit of shipping on Lake Michigan was issued. This was on the night of the 12th, in connection with a disturbance over North Dakota that increased considerably in energy as it crossed the Lake region. However, no verifying velocities were reported from Lake Michigan stations.

Four disturbed periods occurred after the 16th, and warnings were issued for the various portions of the Great Lakes, as indicated in the following paragraphs:

On the 18th warnings were displayed on all the Great Lakes. Most of the advices were issued from the evening map of that date when a disturbance of rapidly increasing strength, with a central pressure of 29.36 inches, was over southeastern Iowa. At the same time a high-pressure area covered most of Ontario. This storm took an almost due eastward course into the Atlantic Ocean. In most of the southern half of the Lake region the wind reached gale force, and over at least limited sections the storm was rather severe. An accompanying feature was the widespread occurrence of thunderstorms.

Small-craft warnings were advised on the 21st for Lakes Michigan, Huron, and Erie in connection with a disturbance of considerable depth over the southern Rocky Mountain region and a marked high-pressure area over the St. Lawrence Valley and the Eastern States. The gradient decreased during the day and no verifying velocities occurred.

Another disturbed period covered the 23d-24th, and either storm or small-craft warnings were issued for most of the Upper Lake region. The disturbance was of considerable depth when it reached Manitoba in its eastward course, but filled in thereafter. For the most part the warnings were justified.

The final disturbance of the month covered the last two days. Warnings were displayed on Lakes Michigan, Huron, and Erie and extreme western Lake Superior. This disturbance developed over the Great Plains and the center passed south of the Lakes. The storm was not severe at any point, but verifying velocities were reached over most of the region where the displays were made.

*Frost warnings.*—Owing either to the prevailing mildness or because vegetation in most northern portions of the forecast district had not attained the stage of being susceptible to frost, but few frost warnings were issued until the last week of the month. At the beginning of the month warnings were being issued, as deemed necessary, only for the extreme southern portion of the district. Two weeks later vegetation was susceptible to frost damage as far north as Iowa, while the latter half of the month witnessed the spread of this phenomenon to all the remainder of the district except upper Michigan. From the 26th to the close the weather was cool and frosty, especially in the Plains region, where heavy-to-killing frosts or freezing temperatures were almost of nightly occurrence. The warnings issued at this time were for the most part verified.

*Special forecasts.*—The special long-range forecasts for the benefit of fruit interests in southwestern Michigan were resumed for the season on April 1, and two days later was begun the sending of fire-weather forecasts for northeastern Minnesota to the State forester at St. Paul, Minn.—*C. A. Donnel.*

## NEW ORLEANS FORECAST DISTRICT

During the greater part of the month this district was under the influence of sluggish Rocky Mountain troughs of low pressure, with but brief interruptions when moderate highs dominated conditions. However, a well-defined area of high pressure, advancing from the northern Rocky Mountain States during the closing days of April, was attended by the lowest temperatures of the month at many stations, although no freezing weather was recorded at the regular stations.

No storm warnings were issued or needed. Small-craft warnings were displayed on the Texas coast on the 21st, 22d, and 29th and were justified.

Frost warnings for northern areas in the district were issued on the 4th, 9th, 29th, and 30th and were generally justified. No damaging or extensive frosts occurred.

Fire-weather warnings were issued for forest areas in Arkansas and Oklahoma on the 2d and Oklahoma and Texas on the 22d. Wind and weather occurred as forecast. There was a marked deficiency of precipitation for the month and the fire hazard was greater than is usual for the season.—*R. A. Dyke.*